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OUR WEATHER FORECASTS.

PUBLISHED weather forecasts are of two distinct kinds. We have those made fully a year in advance and embodied in *Zadkiel's Almanac* and similar publications; and we have the twenty-four hour forecasts which daily appear in the newspapers. Both find numerous believers, and both justify themselves by a certain percentage of successes. But it must not be supposed that both emanate from the same quarter, or are even based upon the same science. The former are founded upon the curious misconception that it is the moon and planets that regulate our weather—a surviving fragment of astrology; the latter have their origin in an application of the laws of meteorology as disclosed by weather-telegraphy.

We cannot at present enter into details regarding the systems adopted by the long-period or quack forecasters; but we have something to say about our daily weather-warnings, which concern us all pretty directly, seeing that we pay some fifteen thousand pounds a year for them. Our remarks may be conveniently arranged under three heads: (1) How the forecasts are made; (2) What degree of success has attended them hitherto; and (3) How they may be improved. We write for the unscientific. What follows, therefore, is not new, but is merely a popular summary of the various views and opinions that have been put forward from time to time within the last year or two.

First, then, how the forecasts are made. Everybody knows that the barometer is essentially an atmosphere-weighter. The envelope of air which incases our globe has weight, and consequently presses upon the earth's surface. Torricelli found that this pressure at the level of the sea is sufficient to force mercury up an empty tube—empty of air, that is—to a height of about thirty inches. In such a column of mercury, therefore, we have a constant index of the weight of the atmosphere. If we take it up a high mountain, it falls, because there is then less

air above us than when we are at the sea-level. If we take it down a deep mine, it rises, because the vertical height, and consequently the pressure, of air above us, is increased. But even at the sea-level the column, when it came to be attentively studied, was found to vary in height. Sometimes it rose, sometimes it fell. At one time it moved a very little; and at another, a great deal. The variation, too, was not regular or periodic—it did not agree with the rising and setting of the sun, nor coincide with the phases of the moon; it was quite erratic. But a little further observation showed a marked correspondence between these mysterious movements and the state of the weather. A great fall of the column, it was noticed, was invariably followed by rain or wind, or both; while a steady rise generally accompanied the clearing-up of the weather. Careful observation soon resulted in the deduction of rules, by means of which the probable weather might be inferred from its movements. And so originated the 'weather-glass.'

Why the movements of the barometer are related to the weather might never have been found out, had not the invention of the electric telegraph made a new departure possible to the meteorologist.

When the readings of the barometer—reduced to sea-level—at various places throughout the country are taken at the same hour of the day, and telegraphed to one man, say in London; when these synchronous readings are marked by him upon a chart of the British Isles, the figure for Edinburgh at the place of Edinburgh, that for Liverpool at the place of Liverpool, and so on; and when all the places at which the barometer was an equal height are connected by means of dotted lines—the result is not, as might almost be expected, a hopeless network of lines crossing and recrossing each other in all directions. *It is always one of four diagrammatic figures.* The dotted lines are called 'isobars;' and the figures which they form are the 'cyclone,' the 'anticyclone,' the area of wedge-shaped isobars, and the area of straight isobars. The two former are most

frequently met with in British weather; the two latter are somewhat rare.

The cyclone, when perfect, is a circular or oval area, the isobaric lines forming concentric circles. In the middle, the barometer is lowest; on the edge of the area, it is highest; and in the space between, the readings pass by slow or rapid gradation from the one to the other. Mark the variable gradation. Its importance will be seen directly. Now, the direction of the wind and the distribution of the weather throughout this area, are fixed and invariable. The wind circulates around the centre in the opposite direction to the hands of a watch. On the east side, the wind is southerly; on the west side, it is northerly; on the south side, it is westerly; and on the north side, it is easterly. There is a slight inward motion, however—the wind really blowing in a sort of spiral—which gives the easterly current on the north of the area a slight touch of the north, the southerly one on the east side a slight easterly direction, and so on. Then the *force* of the wind is regulated by the steepness of the gradient just alluded to. If the edge of the cyclone be forty miles from the centre, and the difference in pressure between the two about an inch of the barometer, the wind will be far stronger than if the distance be eighty miles and the difference in pressure the same, or the difference only half an inch and the distance the same. To make this a little clearer: suppose the barometer at Edinburgh to be 29.30 inches, and at Glasgow 28.30 inches, that would be a very steep gradient indeed, and the gale might be expected to be severe; but if the barometer at Edinburgh were only twenty-nine inches, the gradient is not very steep, and the wind might not be violent. Thus, by looking at a chart on which the isobars are drawn and the barometrical readings marked, the meteorologist can tell with approximate correctness the direction of the wind and its force over the entire area of the cyclone. In the centre, as a rule, the air is calm, with fitful gusts.

Generally speaking, the weather on the eastern side of a cyclone is cloudy, warm, muggy, and subsequently wet; while on the west side it is clear, cool, and showery. Now, were the cyclone stationary, so far as a foreknowledge of the weather is concerned we should not gain very much by all this knowledge. We might gather from the chart that rain was falling here, and that it was showery there; but we could not have that knowledge before the rain or the showers had actually set in. As it happens, however, cyclones *move*. They pass over us generally from west to east, or south-west to north-east, and it is the fact of this motion that renders forecasting possible. We shall have occasion to return to this point presently.

Having so fully described the cyclone, we need only indicate the chief features of the other figures. In the anticyclone, which is stationary, the characteristics of the cyclone are exactly reversed. The barometer is highest in the centre,

and lowest at the edges, being abnormally high throughout the whole area. The wind circulates in the *same* direction as the hands of a watch, and with a slight outward motion. The weather throughout is calm and fine—frosty in winter, warm in summer, with local thunderstorms. The weather that accompanies wedge-shaped isobars is 'too fine to last,' being what is called a 'pet day' between a cyclone just passed and one approaching. Then lastly, the straight isobars—which invariably run east and west—mark a high barometer in the south with blue sky, and a low barometer in the north with feathery cirrus clouds—'gray-mares tails'—and sometimes blustering winds. This distribution of pressure is favourable to the passage of cyclones, and so it generally precedes storm and wet.

We may now see in a general way how the forecaster sets to work. Suppose that the returns from all the stations show a normal state of things, except those from the west of Ireland, where the barometer is reported to be falling, the temperature rising, the wind southerly and increasing in force, and dark masses of cloud rolling up. These indications mark unequivocally the approach of a cyclone. It has travelled across the Atlantic, and its 'front' has just reached Ireland. Now, we know well enough that as the disturbance crosses our islands a storm of wind and rain—of greater or less severity—marches in the van, while showers and squalls with blinks of sunshine bring up the rear. The forecaster, therefore, has only to determine what part of the cyclone will be over a certain place by a certain time, in order to foretell the weather that will prevail at that place at that time. In order to do this, it is absolutely necessary that he know the *size* of the cyclone, its *direction* of motion, and its *rate* of progression. Unfortunately, these are particulars which our insular position renders it impossible to get. The disturbance is half over us before we know any one of these elements with certainty. So they have to be guessed. In the case of an anticyclone, guesswork holds a still more important place, for local weather is then allowed to assert itself, and of it the forecaster has no knowledge whatever. We thus see that although our forecasts are founded upon sound principles, the circumstance of our position renders them to a great extent mere guesses.

Of the success which has attended the daily weather-prophecies we have not very much to say, for so far as any practical benefit is concerned, they are provokingly unreliable. Until quite recently, the most conflicting opinions were held on the point. One person said he found them to be fairly accurate; another maintained that they were as often wrong as right. Gradually, however, the tide of opinion has turned against them. The official Reports, which may be assumed to put the best face on matters, show a percentage of successes very far from satisfactory or encouraging. Early in the year, Sir Edmund Beckett published a letter in the *Times*, in which, by a direct comparison of the forecasts and the actual weather for twenty-four days, he showed the prophecies to be ludicrously wide of the mark. And since then, the opinion has been generally expressed that they are little better than random guesses, and are practically useless. It seems, then, that one of two things must be done;

either the attempt to issue daily forecasts must be abandoned, or an effort must be made to effect an improvement. The ways in which the latter can be done, we purpose considering in a future paper.

ONE FALSE, BOTH FAIR;

OR, A HARD KNOT.

CHAPTER XII.—IN REGENT STREET.

It was the noontide of London life, the time when idlers and toilers, the great and the gay, and those who are neither gay nor great, but none the less important members of the social hive, swarm abroad among the buzzing streets; while the dull, never-ceasing roar of wheels and trampling feet and human voices blend in the deep dissonant chorus that a great city sends forth, floating on the summer air. Before one of the well-known shops in a gay thoroughfare stood a carriage, on the panels of which gleamed the strawberry-leaves of a Marquis; but what attracted most notice was the exceeding beauty of its solitary occupant, a slender graceful girl, dressed in black, and whose bright hair flashed golden in the sunshine.

'Who is she?—Why, Hicks, my dear fellow, the very arms on the carriage-door might tell you that much,' said one self-sufficient loungeur, in answer to a whispered inquiry from a friend, new to London, who walked by his side, and who evidently regarded his town-bred Mentor as an oracle. 'That's young Lady Leominster, of course—the Marchioness, don't you know? so early left a widow. Pretty creature, isn't she? and enormously rich, as I happen to know. Saw something of them, the Leominsters, up the Nile; and came home, too, in the same ship with her and a charming sister, Miss Carew, from Egypt; and I can assure you'— And then the speaker, who was no other than little Ned Tattle, passed out of earshot; and the rest of his communications, accurate or fanciful, as to the circumstances characters and prospects of the Marchioness and her sister, reached no one save his companion.

The lady whose prospects were thus being discussed had not seen, or at least had not recognised, her former fellow-passenger Tattle; indeed, her beautiful eyes took little heed, in their dreamy gaze, as if into the far past or the farther future, of the passers-by. There was a sad and wistful expression in her face, and there was something almost touching, too, in the marked contrast between her listlessness and the proud position to which her rank and wealth and beauty gave her an undisputed claim. There was a very great income and vast hereditary influence at her disposal. She was young and noble; and she was free, as free as any girl, to give her hand where her heart should accompany the gift; or if she chose, to reign sole mistress of Castel Vavr and its wide domains.

It was plain that she had no personal interest in the fact that her barouche stood opposite to the renowned Regent Street shop, for her companion Lady Barbara had just quitted the carriage to enter it. No obsequious male satellite of Messrs Show and Squanderdash came bustling deferentially to the carriage-door to exhibit shawls, or to hand in *scrins* of jewels likely to

tempt a customer so solvent. It was clearly not on her own account that the mistress of Leominster House and Castel Vavr remained a fixture in that crowded thoroughfare.

Presently, along the Regent Street pavement, there came, with measured tread, the figure of a young man, tall and manly and handsome, with a face browned by a hotter sun than that of Britain; no other, in fact, than Arthur Talbot of Oakdene in Hampshire. With a start of surprise, and a glad look in his thoughtful, steady eyes, Arthur Talbot came up to the carriage, lifting his hat as he did so. 'This is quite an unexpected pleasure to me,' he said, as his eyes met hers.

The young lady raised herself a little from her listless lounging attitude. A sudden change came over her face, and there was no softness in her eyes and no cordiality in her tone as she said coldly: 'Ah, Mr Talbot—you here—in London!' while at the same time she slowly surrendered her little hand to the young man's eager grasp.

A sort of chill, as if an icy wind had suddenly begun to blow, came over Arthur Talbot as he noted the coldness of his reception. What had he done, that his friend's young widow, his own girl-friend, to whom he had rendered many a willing service in far-off Egypt, should be thus frigid in her greeting? He had never transgressed on the strength of that old intimacy in a country where travelling Europeans are of necessity thrown much together, and had never forgotten the respect he owed to her grief and her unprotected state and poor Wilfred's memory. That she had never really loved, as lovers love, the late Marquis, admirably as she had done her duty by him, and much as she mourned his loss, Arthur more than suspected; yet he deduced his conviction more from what his dead friend had told him, than from anything he had ever gleaned from the words or manner of his wife. How well he could remember that day, among the painted tombs of Luxor, when the sisters were away, under the charge of the voluble dragoman, and in Madame de Laloupe's company, among the storied wonders of the Sacred Isle, and he and the young dying lord sat together, looking out over the waters of the Nile!

'I was a selfish fool—yes, a selfish fool—to attach that poor child's fortunes to mine, as some skiff might be fastened to a sinking ship.' Such had been Wilfred's words, as he gazed with wan eyes over the great river. 'She never loved me, never learned to know what love is.'

'And yet'— Arthur Talbot had begun, deprecatingly, but in an embarrassed manner, for it was an awkward subject on which to talk.

'And yet she is not mercenary, you would say—did not, as the phrase is, marry me for my money, Arthur,' interrupted the young lord, a slight flush rising to his pale cheek. 'No, Talbot; I know that she did not. I doubt if she ever really understood how great, in a pounds, shillings, and pence point of view, was the prize which others envied her for drawing in the matrimonial lottery. But, poor child, she had a joyless home; and no mother, no elder sister, to counsel her, and was of a plastic nature; and so, I fear, said "Yes" to the first man of sufficient rank and

station who urged her—for I did urge her—to marry him. It was wrong of me—was it not? for even then I felt that I was doomed; but we are all very self-seeking and egotistical; and I feel, now that it is too late, as if I had done poor Clare a wrong.'

How strangely do such words, spoken by lips now silent for ever, recur to our recollection when we look upon the faces of those whom they concern! Arthur Talbot was too true and noble a gentleman to have divulged a syllable of his dead friend's confidence. And although he had come to learn that the widowed lady was inexpressibly dear to him, and though he had been presumptuous enough to think, now and again, that she did care for him—a little; yet a sense of delicacy and pity for her position had restrained any open declaration of love as unbecoming and unworthy. And yet, for all that, Arthur Talbot knew that he loved Clare of Leominster, and thought—though he was too sensible to be vain—that he was anything but indifferent to her. Now—now that they were away from Egypt and the ship, and the incidents of travel—now that they met in London, something in the lady's manner puzzled and saddened him. She was prouder, colder, more self-reliant than the girl-widow that he remembered so tenderly as clinging to his strong arm among the palm-trees and under the green-blue sky of the semi-tropic Nile Valley. They were on neutral ground now; and though their parting at Southampton was comparatively as yesterday, how changed did she appear—how very much more of the great lady, and how much less of the sweet young sorrowful thing that he had learned to love. And yet she looked sorrowful too, and her melancholy eyes rebuked him.

'I am waiting for Lady Barbara, who is making purchases in that shop—for Lady Barbara Montgomery, my aunt; or at least'—and here the fresh young voice faltered, but then went steadily on—'my husband's aunt, of whom, I think, Mr Talbot, you must have heard. She is a great comfort to me now. We live together.—You know her, perhaps?'

'Only by name and by report,' answered Talbot, smiling; 'as, I daresay, Lady Barbara may be acquainted, after a fashion, with my unworthy self.'

'Here she comes. I shall be glad to introduce you.'

Lady Barbara, when Arthur was presented to her, was gracious, and even cordial, in her grand Elizabethan fashion of grace and cordiality.

'Mr Talbot, I know your name so well, and have heard so much in your praise, from—from one to whom we were both attached, that I feel as if we were quite old friends; and as a friend, if you please, and no mere acquaintance, I shall persist, with your permission, in regarding you.' And the old aristocratic spinster spoke the words with such evident sincerity and such conscious dignity of demeanour, that Talbot could not help being impressed by them. Good manners, grand manners, are a fleeting inheritance of a past age, when more heed, perhaps, was attached to form than to substance, to the specious outside than to the soundness of the core. But Lady Barbara—as good and true-hearted a woman, prejudice apart, as ever trod the earth—had got them, and therefore was able to speak her mind weightily

when she pleased, without making herself ridiculous in the process.

'I, too, feel as if we were old friends, Lady Barbara,' said Arthur, in his deep frank voice, while his thoughtful eyes met those scrutinising ones that were bent on him; and Lady Barbara, a severe judge of women, but, what is rare among her sex, a harsh and Rhadamanthine censor of men, was satisfied by what she saw, pleased, too, by what she heard. It seemed to her, at anyrate, that her nephew had made a good choice in his friend—the friend of whom she had heard so much praise—and that the young Squire of Oakdene was neither a fool nor a fop. We know that Lady Barbara had regarded the late Marquis's love-match with no especial approbation. It had been, in her judgment, a piece of boyish caprice, the indulgence of an idle fancy, since no money and no aristocratic alliance had accrued to the House of Leominster in consequence of the marriage. In point of mere heraldry and genealogy, all was well, of course, for the Carews were of prehistoric descent; but Lady Barbara was not without the curious prejudice of many who are born to hereditary honours in these our islands, and who therefore consider the untitled, the 'commoners,' in short, as of a caste hopelessly inferior to the wearers of coronets. She had to reconcile herself to the inevitable, and she did her best to be a guardian angel to Clare of Leominster. To Arthur Talbot she was very gracious indeed.

'You must come home with us, Mr Talbot; we are going home now,' said the dignified spinster; 'unless any engagement prevents'—

'I have no engagement. Indeed, I have but few occupations here in London,' answered Arthur, frankly and pleasantly. 'But,' he added, as a shade came over his face, 'I am afraid of inflicting too much of my company on Lady Leominster.'

And indeed the young lady thus alluded to had been leaning back in her barouche, as cold, inert, and uninterested as a beautiful statue. She turned slowly towards him now, and a smile brightened her face for a moment, as she said gently: 'It would not be an infliction, Mr Talbot. I—we—should be very glad if you would go home with us.'

Arthur stepped at once into the carriage, and the order was given by the younger of the two ladies for 'Home;' but how coldly and carelessly she said it! How soon had the light faded out of the sweet blue eyes, and how rapidly had the lovely frozen image, for a moment thawed into warm, soft humanity, congealed into ice again! Before the barouche was well out of Regent Street, Arthur began to repent of having accepted Lady Barbara's invitation. His patience, however, was not put to a very severe test, for Mayfair distances are not as Belgravian ones, and Leominster House, with its great gates and its huge halls, and that sense of vastness which some palaces and most fortresses contrive to impress upon the stranger who has once been admitted, suggested a new train of thought. A grand, gloomy home—such were his meditations—for that most beautiful, most tender young thing, whom a strange chance of Fate had forced into a high position of exalted friendlessness. Arthur had known the mansion in his friend's short

reign; and he knew also that Wilfred had never liked his townhouse.

'It makes me shudder; I feel always as if I were entering a mausoleum,' the sickly young lord had said, once and again, to his best friend. There certainly was something oppressive about its very spaciousness, something portentous in the respectful grimness of the well-trained domestics. It was all very fine, decorous, and sad, as if a state funeral were going on—all, so Arthur thought, uncongenial to the girlish mistress of so much dusky splendour.

THE AGEING OF THE EYE.

THE department of science which is busying itself with the production of a new light has of late made a great sensation in the world; while that branch of it which has to do with the marvellously delicate organ by which alone we are able to avail ourselves of any kind of light has attracted the attention of comparatively few beyond those who are professionally interested in it. Yet, if we look back over the past twenty years, or less, and attentively consider the progress that has been made in each, we may almost be inclined to doubt whether, after all, ophthalmic science has not made advances quite as wonderful in their way as those which have signalled the kindred science of light as produced by electricity.

The subject is far too wide a one to be dealt with as a whole within our limits here; but there are one or two points of special interest that may be touched upon; and we cannot do better, perhaps, than present them in their general outlines as given in a valuable publication, entitled *Eyesight Good and Bad*, written in a popular style by Mr Brudenell Carter, well known as a leading authority on ophthalmic science.

The chief features in the constitution of the eye are, we suppose, generally understood. In principle, says our author, it almost precisely resembles the common camera-obscura of the photographer, which, we may explain, is merely a dark box with an adjustment of lenses in the front of it, and a ground-glass screen at the back. The ball of the eye is the box of the camera. The transparent cornea in front is a bow-window admitting light into the box. The iris is a coloured curtain to be pulled back when too little light is entering, and to be drawn forward when there is too much. The pupil is the space surrounded by the curtain. It used, until quite a recent period, to be supposed that the blackness of the pupil and the darkness of the interior of the globe of the eye were due to a power of absorbing light possessed by its inner tunic. It was thought that none of the light passing into the eye was reflected, and hence it was supposed that the interior of the living eye could never be seen. This, however, was altogether a mistake. By means of a perforated mirror and an arrangement of lenses, the late Mr Charles Babbage discovered a means of rendering every detail of the interior of the eye visible. It was found that there was no such absorption of light by the interior of the eyeball as had been supposed; that light was in fact reflected, only the observer could not discover the fact without being himself right

in front of the pupil, and then, of course, he prevented the light going in. The writer of this had an opportunity the other day of making a minute inspection of the insides of the eyes of a patient at one of the large London hospitals, where—as everywhere else where ophthalmic surgery is practised—the 'ophthalmoscope' is so continually in use, that eye-doctors of the present day cannot but wonder how their predecessors could have got along without it. This simple and beautiful instrument—which, when Babbage invented it, singular to say, was thought to be of so little practical use that the idea was allowed to be lost, and had to be re-invented by another philosopher, Professor Helmholtz—has resulted in many most important discoveries connected with the mechanism and diseases of the eye.

The inside of the eyeball is filled by transparent liquids, in the midst of which is suspended a veritable crystalline lens, through which must pass all the light from the bow-window in front. This crystalline body, and the fluid before and behind it, may, for our present purpose, be considered to form one refracting medium—one lens—corresponding to the lens of the photographer's camera. This transparent medium, just as in the camera, throws upon a screen behind it an image of whatever is in front. The screen is the retina, which is simply the optic nerve—the nerve coming from the brain to the eye, and spreading over the inside of it like a very delicately sensitive lining.

Now, if we take a perfect human eye and a very accurately focused camera, both gazing out, so to speak, at some distant object, the two instruments will in principle exactly correspond with each other. In each case, parallel rays of light coming from that distant object will fall upon a convex lens, and will be refracted—that is, bent—towards each other, and will meet in a focus which falls exactly on the screen behind, where a clear, sharp picture of the object will be produced. In the case of the eye, the screen, as we have explained, will be the retina which will receive the picture, and will convey it to the brain, and the distant object will be clearly seen. Thus much has long been understood quite well. But here now is a remarkable difference between the two instruments—the eye and the camera. The eye may be taken from the distant object and turned upon the finger-nail or a book in the hand, and instantly this near object will be seen with perfect clearness. Turn the camera upon some near object, and nothing can be seen at all clearly till it has been refocused. How is this? If the camera requires readjustment, why does not the eye? The fact is the eye does require it. It is just as necessary that the eye shall be refocused, as it is that the camera shall be. That this is really the case, has long been recognised. Indeed, if we observe closely, we shall be quite conscious of some kind of readjustment taking place when we turn the eye from one object to another. The sight is almost instantaneously adapted to the fresh object; but until it has been adapted, we do not see the thing. 'If,' says our author, borrowing an illustration from Professor Donders, 'we take a piece of net and hold it between the eyes and a printed page, we may at pleasure see distinctly the fibres of the net or the printed letters on the page through the interstices of the net;

but we cannot clearly see both at once. When we are looking at the letters, we are only conscious of the net as a sort of intervening film of an uncertain character; and when we are looking at the net, we are only conscious of the page as a grayish background. In order to see first one and then the other, we are quite aware of a change which occurs in the adjustment of the eyes; and if the net is very near, and we look at it for any length of time, the maintenance of the effort of adjustment becomes fatiguing. The fact that some alteration in the eye, having the same effect as the refocusing of the camera, really does take place, was long ago clearly established; but the nature of the alteration and the mechanism by which it was effected are quite recent discoveries.

We mentioned just now a crystalline lens suspended in the midst of the transparent fluids which fill the globe of the eye. 'This,' says Mr Carter, 'is a solid body, which is inclosed in a delicate, transparent, and structureless membrane. In shape it resembles an ordinary bi-convex lens, except that it is less strongly curved in front than behind. In youth it is a soft or moderately firm and highly elastic body, perfectly transparent and colourless, and as bright as the brightest crystal.' This is now known to be the little focusing apparatus of the eye. Let us again look at that perfect eye gazing at a distant object. The eye is in repose; there is no strain upon it of any kind, and this lens is in its normal condition, and is held steady, so to speak, just inside the pupil by an elastic membrane radiating from it and attached to the wall of the eye. If, now, we suppose the gaze to be turned upon some near object, then the rays of light coming from that object, instead of being practically parallel, as they were before, will be divergent; and the lens in its normal condition will not be able to refract them sufficiently to bring them to a focus on the retina. Either the retina must be moved back a little, or some change in the refracting power of the eye must take place. Various theories have been propounded from time to time; but it has only been of late years that the real facts have been known. It is now certain that that little crystal lens has a marvellous power of changing its form. The moment the eye is taken from a distant object and turned upon a near one, a zone of muscle, hidden round the edge of the lens, pulls at the elastic membrane which holds it taut, as a sailor would say. The elastic membrane stretches a little, and the lens bulges out before and behind. It becomes more convex; and the more convex the lens, the greater will be its refracting power. Thus, the divergent rays from the near object will be brought to a focus in as short a space as the practically parallel rays from the distance. In other words, the eye has adapted itself to the altered distance, the image falls as before exactly on the retina, and the thing is again clearly seen.

If this simple and beautiful mechanism be understood—and after all, it is only the mere mechanism of the thing that we can pretend to any knowledge of—the power by which the muscle and membrane pull against each other with such a nicety of balance as to perfectly and instantly adjust the focus, is a mystery as profound as it ever was; but if we understand

this simple and beautiful mechanism, we shall be able to understand something of the changes in the power of vision which usually take place with advancing years. It is a common observation that short-sight has a tendency to improve as years go on—that it has a tendency to lengthen. It is usual also to speak of short-sight as an exceptionally strong sight. Both assumptions are pronounced to be erroneous, and it is easy to perceive where the error lies. The power of the eye never varies in its distant range—apart, of course, from disease. As we have said, a distant object is seen by rays that are practically parallel, and an image is formed on the retina merely by the passive reception of those rays. So long as the media of the eye remain transparent and the optic nerve unimpaired, the distant range of the eye will not vary, because it depends not upon any muscular power of accommodation—not upon any effort of the eye—but upon the natural formation of the eyeball and its merely passive power of refracting light, precisely as an ordinary glass lens does.

The sight of a near object, on the contrary, involves in the case of a normal eye an actual muscular effort. A near object is seen by rays that are more or less divergent, and which require to be more powerfully refracted than the parallel rays in order to bring them to a focus within the same space. We have seen how this refraction is brought about—by an alteration in the shape of the lens. In youth, this alteration is easy enough. Elastic membranes yield readily, muscles are vigorous, and above all, the lens itself is soft and highly elastic. But, as years go on, a gradual hardening process takes place in this crystalline body. It gradually loses its elasticity, and becomes more and more rigid, and the power of accommodation constantly diminishes. It is found on an average of observations, that at ten years of age the crystalline lens may be rendered so convex as to give a clear image of an object three inches from the eye. At twenty-one, it will only accommodate itself to an object four and a half inches from the eye. Anything nearer will be obscure, because the lens will not assume a form sufficiently convex to refract to a focus on the retina rays of light so divergent as any nearer object will radiate. At forty years of age, the 'near point' has reached to a distance of nine inches; and at fifty, to thirteen inches. At sixty years of age, the lens has so far lost its flexibility, and therefore its power of responding to the muscle, that it cannot ordinarily give a clear image of any object less than twenty-six inches from the eye. At seventy-five, the power of accommodation is wholly lost; light still passes through the eye, and is focused on the retina, but only when it comes in parallel rays. Parallel rays it can converge on the retina; but divergent rays require that extra refractive power which the aged eye has lost by the hardening of the lens.

Not as a matter of disease, then, but in the ordinary course of years, and in every eye alike, is the bodily sight gradually weaned from the scrutiny of near objects around, and permitted to turn a clear vision only upon things afar off.

When the eye has so far lost its power of assuming sufficient convexity to bring a clear

image to the retina, a pair of convex lenses in the shape of spectacles carefully adapted to individual requirements will make up the deficiency to a nicety; and one of the strongest impressions Mr Carter's book is calculated to leave on the mind of the reader is, that an immense amount of discomfort would be obviated, and many a good pair of eyes would be saved, by a readier resort to the aid of spectacles, provided only that they be selected under skilful advice.

THE MAN IN POSSESSION.

IN FIVE CHAPTERS.—CHAPTER IV.

WE started off as for dear life. At first, the mare shied a little, and seemed inclined to be troublesome. But she found that it was a practised hand that held the reins, and resigned herself to obedience accordingly. Instead of driving down the avenue to the gate which led into the village, and which was only about three hundred yards from the house, I turned off sharply on leaving the yard, and chose the gravel-road which, leading to the principal entrance of the mansion, passed on through the entire breadth of the park to another gate on the far side of it, and which opened into the high-road. By adopting this course, the odds were considerably in my favour, for I hoped to reach the park gate and emerge into the high-road before any one could start in pursuit. Once fairly on the road, I would try the mettle of the mare. If, unfortunately, we should be overtaken, and it came to a close fight—which I scarcely doubted—the farther we were from Briteleigh Hall the better, and the greater chance I should have of dividing our pursuers and grappling with them singly. Of one thing I was certain, and it rendered me sanguine of success—as Mr Wintock only kept two horses beside the mare, only two mounted horsemen could follow. He would not try a vehicle; for his others were heavier than the gig, and would place our pursuers at a great disadvantage.

'Soho, soho, lass!—steady!' as the mare, being fresh from the stable, began to lay her ears back and to address herself to her work. It was with difficulty that I could restrain her from dashing off at full speed. We should require her utmost by-and-by. I did not wish to wind my animal at starting, but to husband her strength for a long pull.

Steadily across the park at a sharp trot. The gate is reached. Throwing the reins to Miss Wintock, I leap down, unbar the gate, and lead the mare through. Up again and off, but rather faster than before, though I still held the mare in check, for I could see there was a heavy drag for her up a long steep hill a few miles distant. If we can only reach its summit, we will then be not more than a dozen miles from Raleigh station, whence we can reach the metropolis. It was rather a trying task for the mare; but she must and shall do it. Miss Wintock had scarcely spoken since our exit from the Hall, seeming as if fearful of distracting my attention, but evidently in a state of great excitement; and every sense is on the alert, for she looks back repeatedly and earnestly through the looming darkness, and starts nervously at the slightest sound.

The foot of the hill is gained. It is a much

heavier drag for the mare than I had anticipated; for the road on this part has lately been gravelled, and with a vehicle behind and two persons in it, no animal can fairly be expected to ascend it at full trot. Suddenly, Miss Wintock grasps my arm. 'Listen! They are already on our track!'

I turn my head. The sharp percussive ring of horses' hoofs strikes faintly on the ear. We are pursued, and by more than one person; there are at least two on our trail, and they are following us at full speed. No doubt the Wintocks have saddled the extra horse, and will leave untried no means, fair or foul, to regain their captive.

The mare toils and pants as the steep acclivity begins to tell upon her powers. It is brutal to give her the whip, but it must be done. She must strain every muscle to the utmost, even though I feel that I am doing the plucky animal a gross injustice.

We are more than halfway up the hill, and the remainder is not nearly so steep; in fact, simply a gentle rise. With a snort, a proud toss of her flowing mane, and a loud neigh of defiance, she pricks up her ears and increases her speed. She has caught the clatter of the rattling hoofs behind, and, with the instinct and emulation of all spirited animals, is determined not to be distanced. Gallant creature! Not another stroke with the whip, if I have to fight our battle out on foot on the road. Indeed, there is no occasion; on gaining the ridge of the hill she has bolted. The foam is frothing and dripping in fleeces from her bit; the wheels are whirling with a fierceness that renders us dizzy. I can hear and feel the strain upon the shafts as her iron-clad heels dash the sparks from the flints on the road, and every instant expect them to snap like rotten tow. Will the axles hold and the springs stand? The friction is enough to make tires and spokes fly asunder.

The moon is just rising above the horizon. By her light we can discern two mounted riders coming on behind at a great pace; one is considerably in advance of the other. No doubt they are the Wintocks. They are gaining rapidly upon us. Ah! the foremost is Mr George. I recognise the horse also; it is the swift supple bay he usually rides, and which is more than a match for the mare at any time, much more so with a vehicle and two persons behind her. There is no help for it, and we cannot escape an encounter.

How furiously our pursuers ride! George Wintock is within a hundred yards. I fancy I can see by the light of the moon that his visage is ghastly with passion. I can see his coadjutor strike the rowels fiercely into the flanks of his charger, in order to come up with him. The mare is getting over her pet, and is slackening her speed. I tighten my grasp of the reins and speak coaxingly to her. She is under command and well in hand. Shall we pull up at once and do battle? No; we will hold on till the last minute.

The foremost rider is close upon us; the second is not far behind. With loud imprecations, they shout to us to stop. I glance at my companion. The cool night-air and the hope of escape have wrought wonders; the stern, almost fierce light on those lustrous dark eyes reassures me.

'Can you take the reins for a minute?'

She stretched out her delicate fingers by way of reply.

'Pull evenly and not too tightly. Keep her in the middle of the road, if you can. Be cool, and let her go her own pace.'

'Draw up, or you're a dead man!'

I turned. George Wintock was within a yard of me, his hunting-whip raised, the heavy handle about to descend upon my skull. Springing to my feet and balancing myself as best I might, I poised the gig-whip, parrying his blow and keeping him at bay. Finding that I had the longer weapon, he immediately changed his tactics for a dastardly mode of attack, of which no man, let alone a sportsman, who is supposed to love his horse, could ever possibly be guilty. Spurring his steed, he rode past me to the mare's head, and raising himself in the stirrups, aimed a crushing blow just behind the ears, intending to fell her to the ground, in which case we should in the melée have been at his mercy. It was well meant; but at the critical instant the animal swerved slightly, so as to evade its full force. It was, however, sufficiently powerful to make her stumble and sink almost upon her knees. But the ruffian had for once reckoned without his host. He was within reach of my whip-handle, and, as the mare rose, I, wrought to a pitch of desperation by our position, and incensed by his cowardly and brutal act, swung the butt-end with resistless sweep, striking him on the side of the head, breaking the whip-handle into several pieces, and hurling him headlong against the bank by the roadside. I had the satisfaction of seeing his horse gallop riderless away.

A shriek burst from Miss Wintock, and I clutched the reins. It was high time, for the poor mare, mad with agony, was up on her hind-legs, fighting with her fore-feet in the air. For a second it seemed as if we should topple over; the next, she was staggering from side to side like a drunken man. Mechanically, I drew one of my small pistols—in my excitement, I had till that moment entirely forgotten them.

'Keep off, sir!—keep off, as you value your life!' I shouted to the elder Wintock, for he was close upon us.

His reply was a torrent of imprecations and threats.

'Give it to me!—You attend to the mare,' cried the heroic girl as she snatched the pistol quickly from my hand. 'I know how to use it, and will not be retaken alive!'

In truth, there was full occupation for both my hands, as momentarily I expected the poor animal to fall in her flurry. It was as much as I could do to keep her on her legs.

Encumbered with the mare, there was no chance of defending myself in the gig. I was about to pull up short, jump into the road, and face the enemy on foot, when a heavy blow from the butt-end of Mr Wintock's whip across the back of my head struck me from my seat. Had I not let go the reins with one hand and caught at the side of the gig, I should have fallen on the mare's back. As it was, I slipped sideways to the bottom of the gig, leaning powerless against the splashboard. The mare gave a lurch, and was nearly down, but with a struggle recovered

her footing. Mr Wintock's arm was raised to repeat the blow. I gave myself up for lost, for he struck with tremendous force. Suddenly there was a vivid flash and a loud report. Miss Wintock had fired straight at our assailant, who on the instant had pulled up short, so that the ball struck the animal instead of the man! Stung with the wound, alarmed at the noise, it uttered a loud snort, bounded aside, galloped a short distance, and then fell, Mr Wintock narrowly escaping being crushed as it stumbled and rolled upon the ground.

The report of the pistol startled the mare and seemed to arouse her failing energies. Pricking up her ears, she shook herself till the harness rattled again; then started forward at a brisk pace, though not nearly so fast as before. The Wintocks had got the worst of the encounter. Yet our plight was but a sorry one. I could scarcely keep my seat in the gig, from the effects of the blow, which had almost stunned me. My wound, too, bled profusely, saturating Miss Wintock's white kerchief, which, as we rode along, she had contrived to bind around my head, in spite of her own nervous agitation.

We had gained the level road and our progress was easier. But the mare had been cruelly used, and it was evident would not stand a long journey without rest. The station was still many miles distant. In her present state, she must knock up long ere we could reach it. Indeed, I was far from feeling sure that I could myself hold out during such a journey. There was, too, just a chance that Mr Wintock, being well acquainted with the locality, might, by misrepresenting the case, or by bribery, or by an admixture of both, procure fresh horses and aid without returning to Briteleigh Hall, and then recommence the pursuit. It was an ugly fact—I had literally stolen his mare and gig. I had also eloped with his ward; for so he might term it, though she was no longer a minor. These, on the face of things, were plausible pretexts by which he might almost command assistance from any reasonable person. Before us stretched a long dreary common, which we must cross. There might be other dangers, from tramps or from gangs of gipsies, who not unfrequently encamped in that locality. In my present state I could be but of little use to my fair companion as a defender.

Miss Wintock seemed to share my unspoken thoughts. Turning to me, she said: 'Mr Meredith, you have been brought into sad trouble on my account. It would have been better, perhaps, for you to have left me to my fate.'

'My dear young lady, do not pain me by indulging such a thought for a moment. If occasion demanded it, I would gladly do the same again. The risk to me is nothing. I only wish I could see my way clearly what next to do for the best. But I confess myself totally at a loss.' I spoke faintly and despondingly.

'Can we not seek shelter for a while, at least at the first inn we happen upon? Your wound could be looked to, and the mare might rest a little.'

'I fear that would not do. The Wintocks, knowing that we are on the high-road, will probably guess that we shall make all haste to the metropolis. Depend upon it, they will not part with you without another effort. It is now getting

very late. If we stop at all, we must put up till the morning; for I do not see how we could start again from a strange inn till early dawn. No doubt our pursuers will make every inquiry in following us, and will be quickly on our track. What if they should overtake us, and give me in charge to a constable for stealing the horse and gig? Not that I care for myself; but you would be left without a protector, and entirely at their mercy. And yet I fear that I could do but little in that way just now. Indeed, I am at my wits' end; for it is plain that we cannot travel much farther in our present plight.

'Then why not leave the high-road at once? See! there are lights in that valley yonder to the left; and there is a turning a little farther on, which apparently leads that way. Let us try it. Possibly, we may find a safe refuge. They will not dream that we dare stay so near the Hall. If they hunt for us at all, it will be farther away.'

The suggestion struck me as a capital one; and in fact there seemed to be no alternative. 'Good!' I said; 'very good! A lady's wit excels a man's invention, any time.' So saying, I turned the mare's head, and leaving the high-road across the common, drove steadily down to the spot where the lights appeared.

At about two miles' distance we found a scattered village. The lights we had seen were reflected as from the windows of the only inn in the place. The house was just about to be closed for the night; for the one or two who always stay to the latest minute to drain an extra glass, were departing, some of them with rather an unsteady gait. Ringing the yard-bell, I gave the mare and gig into the sleepy hostler's keeping, and, with Miss Wintock on my arm, walked into the house. Boniface was seated in the bar-parlour, taking it very cosily. Making myself quite at home, I handed my companion to a chair and called for refreshments. While he was serving us, I said: 'Landlord, I want a sleeping apartment for this young lady.'

The fellow was a mere clod, sheepish, carrot-haired, and bloated; apparently a good-tempered kind of calf, yet sufficiently astute where his own interest was concerned. He eyed us both for a moment very suspiciously. Truly, neither of us cut a very respectable figure. Miss Wintock in her plain dark dress, surmounted by old Martha's horridly antiquated bonnet and thread-bare shawl; and I with my wounded head bound up in a bloodstained handkerchief. There was sufficient reason for the man's distrust. 'Very sorry, sir!—very sorry, indeed! can't have it. Never let beds to strange folks this time o' night.'

'Well, but my good man, you see'—I commenced remonstrating.

He gruffly cut my speech short. 'Noa! I don't, and I don't want to. You can't have any beds here; and that's flat.'

Just then the landlady entered the room. She seemed to be rather a genteel sort of person compared with her spouse, and to be about retiring to rest. I at once appealed to her.

'Madam, I am requesting the landlord to oblige me with a night's accommodation for this young lady. We have been attacked on the

road, and compelled to turn out of our way; and we cannot possibly reach our destination to-night. I am agreeable to make any shift myself—a shakedown in your hayloft, or a stretch on the settle by the fire here. Put me anywhere you please, so that you make the lady comfortable. You have our mare in the stable and our gig in the yard; put them under lock and key as security, if you like. We are willing to pay to the full any reasonable charge as well, in advance. What more can you require?' As I spoke, I took out my purse, not very heavily lined, truly, but sufficiently so for present need. Money Miss Wintock had none.

The landlady glanced suspiciously at Miss Wintock. She could not make her out at all. Her costume was decidedly not that of a lady; but the word 'attacked' awakened her curiosity.

'Deary me! attacked by them tramps. I am glad they did not rob you, for I see you have still your purse. How did you manage to get away from them?' And then she hurriedly proceeded with a string of eager questions, scarcely waiting for a reply.

'She is really a lady born and bred,' I interrupted. 'You surely will not turn her out again into the road at this hour of the night?'

'But I cannot understand why a lady should come abroad in such a dress as that,' she replied sarcastically; while she spoke, an idea seemed to force its way into her mind, and she archly added, 'unless it is a runaway match. In that case, my husband and I would rather have nothing to do with it. We might get into trouble.'

'I sh'd think not—I sh'd think not! No runaway folks in Bob Simpson's house, if he knows it. Come, young people, you must go fuddier; we can't have folks like you here,' blurted out the landlord, moving from the room, and calling to the hostler: 'Ben, putt that 'ere mare in agen; lady and gen'l'man's a-go'in' on.'

I was about to remonstrate further and more strongly; but Miss Wintock rose indignantly to her feet. Hitherto, her natural shyness, combined with the false and very unpleasant position in which she was placed, had kept her silent. Unpinning the old shawl, and raising the hideous bonnet, she shook her glossy black hair until it hung down in clustering masses on her shoulders. 'Yes, landlord, I am a lady—though you seem to doubt it—and a very shamefully oppressed and injured one. I am not compelled to enlighten a stranger respecting my private affairs; but this gentleman has just risked his life in my service. You see he is not in a fit state to drive me on to the next town, even if it were not so late. I beg of you as a man—if you have any manhood in you—and for humanity's sake, to accede to his request. I pledge you my word, my honour as a lady,' she continued proudly and passionately, and with a short scornful laugh, 'that you incur no risk. We are not burglars, that you should dread us so.'

The moment Miss Wintock threw aside her bonnet and began to speak, the landlady fixed upon her an earnest scrutinising look, bending forward with parted lips and scanning her features narrowly. 'Why—surely—can it be?' she exclaimed in wonderment, eagerly seizing the young lady by both hands.—'Why, Bob, 'tis Miss Wintock, as I'm alive! Don't you remember my

dear young mistress, that used to be at the Hall?—Oh! my dear young lady, who could have dreamed of seeing you in such a pickle! Whatever has happened? Where have you been so long? They said you left the Hall and went abroad, after your poor pa's death.—Stay here! Yes; that you shall—for a twelvemonth if you like, and have the best bed in the house too.'

The sudden outburst of the landlady took Miss Wintock by surprise, and the warm-hearted creature rattled on in such voluble style as to admit of no reply.

Bob Simpson had returned to the bar-parlour, after bawling out his orders to the hostler from the passage, and had stood as if stupefied during Miss Wintock's transformation and passionate appeal. It was more than his very limited stock of brains could cope with. He had half turned away again, possibly with the intention of hastening the hostler's movements. But his wife's exclamations brought him to a sudden halt, and he remained staring and gaping with open mouth, as the mutual recognition took place, Mrs Simpson, in her delight, almost forcing Miss Wintock back into the chair from which she had risen.

'Eh! What? Bless me! Miss Wintock! Jump o' my wig, who'd ha' thought it!—How d'ye do, miss? Glad to see ye, and thank'ee kindly;' and he took her tiny hand in both his great rough clumsy ones and moved it up and down, as if he were slowly plying a pump-handle. Off he started again into the passage and to the back-door which led into the yard. 'Ben!' he shouted, 'take that 'ere mare out agen. Gie her a rub down and feed her well. Lady and gen'tleman ain't a-goin' on agen.'

It was a lucky hit our turning off from the high-road, for the landlady proved to have been an attached servant of Miss Wintock's parents, who had lived with them first when quite a girl, had grown to womanhood in their service, and afterwards married a comfortable though not very intellectual partner. The numerous kindnesses she had received from her dear young mistress, as she still fondly termed her, and whose special attendant she had been, now bore grateful fruit; and she was most assiduous in her kind attentions to us both, though it was evident that her curiosity was excited to the highest pitch by Miss Wintock's sudden appearance at such a time, alone, in such company as mine, and above all in such strange attire.

'Ye're safe housed for the rest o' this night, miss, at least,' said our host, as, poising his glass to drink the young lady's very good health, he glanced up at the old-fashioned blunderbuss suspended over the mantel-piece, and to which was appended a card with 'Loaded' inscribed upon it in legible characters. 'I shu'd like to see any little half-dozen on 'em try to git you out o' Bob Simpson's house! I'd make 'em—I'd make 'em'—But here the action of his brain did not keep pace with the warmth of his feelings, and he was at a loss for a simile. 'Ah!' he blurted out at last; 'I'd make every one on 'em grin like a monkey with his head on a choppin'-block.'

'Bravo! my worthy friend; you're a Briton to the bone,' I replied, grasping his hand. 'Once safe in London, we do not fear. It is

the getting there. I don't think it likely we shall be traced till daylight. Then no doubt the Wintocks will be on the alert, and scour the neighbourhood far and near. A thousand unlucky chances may happen to bring us together; or they may even now have procured fresh horses and proceeded to Raleigh, and intercept us when we arrive in the morning, as we enter the suburbs.'

'Now, listen to me a minute, Bob,' interrupted his better-half. 'It is only five miles across country by the byroads to Slowham station, [This I did not previously know.] The train passes through on its way to London about eight in the morning. I will lend Miss Wintock another dress and a bonnet and cloak. You let Mr Meredith have your loose greatcoat, and the broad-brimmed low-crowned hat you drive to market in. It is too large for him; but we can easily pad it. Ralph shall drive the pony and cart over with them the first thing in the morning, so as to be in good time. He needs to know nothing. As soon as they are fairly on the road, let Ben start with the mare and gig for Briteleigh Hall. It won't do for them to be found on our premises; that might get us into an awkward mess. Should he meet any of the Wintocks' people on the road, he can speak the truth, and say that a lady and gentleman left them here to-night, desiring them to be sent back in the morning. And if not, let him drive them on to the Hall, and leave them in the yard with the same message. To-morrow being market-day, he is sure to get a lift part of the way back at any rate.'

Shortly after settling our plan of action, we retired to our several rooms, but only for a short space, for we were astir again before daylight. Bob and his spouse insisted upon giving up their bed to Miss Wintock; whilst I lay down in a spare one.

Punctual to the minute agreed upon, Ralph was at the inn-door with the pony and cart; and we took a grateful and affectionate leave of our host and hostess. We reached Slowham just in time to catch the train, and by noon we were safe within the precincts of the metropolis.

SNAKES AND SNAKE-LIFE.

THERE cannot be the shadow of a doubt that snakes form a group of animals which do not occupy a favourite or elevated place in the estimation of the public. Indeed, the reverse position, that which regards them as a series of unlovely and poisonous reptiles, more accords with the popular verdict regarding these animals. Poetry, too, has lent its aid and influence in instilling feelings of unfriendly character towards these reptiles. But we know that poetry is not always true to nature, and it may be sufficient to add that in the present instance poetry has simply followed the popular lead.

The appearance of a handsome volume—*Snakes; Curiosities and Wonders of Serpent-life*, by Catherine C. Hopley (Griffith and Farran, London)—devoted to an exposition of the wondrous ways and works of serpent-existence, and the fact that the volume

in question has been written by a *lady* who for many years has taken a deep and practical interest in snake-life, must together be viewed with a high degree of interest by naturalists and popular observers alike. It is of course an old adage that one man's meat may be another's poison; and of intellectual studies it may also be said that the dislike of one person may be the delight of another.

To zoologists, and to those who have learned something of the charm with which the observation of living nature is at all times surrounded, the family of snakes has always presented favourite objects for study. Hence we must be very careful of assuming that prevailing prejudices, or popular ideas regarding serpents, are to be esteemed correct. Indeed, so far is this from being the case, that even groups of animals and plants which to the popular or uninstructed eye would present no phases worthy of a moment's study, are found to teem with an interest that may absorb a lifetime. The fungi that grow by the wayside, the lichens on the wall, the animalcules that people our ponds and ditches—each and all of these and many allied groups of plants, have afforded intense delight to hundreds of observers who have learned the delights of nature-study. In a similar fashion do we learn to recognise that the despised snakes form a field of study, which, either in respect of its curious nature or of its interest, is second to none in the range of the naturalist's subjects. And Miss Hopley's volume only serves to render this latter assertion clear. Instead of being merely regarded as a group of uninteresting and venomous creatures, our authoress shows us that in the records of snake-life, there are features of the deepest interest to those who care to learn. It will therefore prove one of the most important results of the publication of this volume, if we may be enabled, by Miss Hopley's aid, to study some of the phases of snake-life, and to learn some of the zoological lessons which such a study is well calculated to teach.

A serpent is in reality a highly wondrous piece of natural mechanism. If we regard for a moment the lithe flexible spine, the ribs which end, not in a breastbone, but in the great scales of the lower surface of the body, the beautifully adjusted scaly covering, the poison-apparatus in those species in which it is developed, and the muscular layers through which serpent-movements are executed, we cannot fail to see that we are viewing one of nature's 'strange fellows' and one of the most modified of the children of life. Taking even the tongue of the snake, to the examination of which Miss Hopley devotes no fewer than three chapters of her book, it is astonishing to find the amount of popular misconception which prevails regarding the nature of that organ. Persons who see a snake in a reptile-house, are accustomed to regard the lithe, black, forked organ, which whips in and out of the snake's mouth as it moves about, as the 'fangs,' 'sting,' or 'poison-dart' of the animal—ignorant of the fact that no snake can sting. Now, we can only see the poison-fangs—which in all snakes that possess them are situated in the upper jaw—when the mouth of the snake

is opened wide. The forked organ that is continually passing out from the mouth and which is as rapidly withdrawn, is the animal's tongue. Yet hundreds of persons visit zoological gardens, and leave them, under the impression that they have seen the creature's 'sting.'

The tongue of the snake is in itself a very beautifully constructed organ. That it acts as an organ of touch, few, if any, zoologists deny; and from its soft sensitive structure, it would seem to be admirably adapted for this tactile office.

Situated near the tongue, is the *glottis* or opening of the windpipe of the snake. The windpipe, as every reader knows, is the road to the lungs. Snakes as a rule have only one of their two lungs well developed, the second lung remaining in a rudimentary condition. Miss Hopley tells us that on one occasion she was watching a large python at the Zoological Gardens swallowing a duck it had just killed, when she was struck 'by a singular something projecting or hanging from the side of the snake's mouth. It looked like a kind of tube or pipe, about an inch and a half or two inches of which were visible. The python had rather an awkward hold of the duck, having begun at the breast with the neck doubled back, the head forming some temporary impediment to the progress of the jaws upon the prey. So the strange protuberance gave one a "sort of turn" and a shudder. It looked as if it might be some part of the crushed bird, and then again it had the appearance of some internal arrangement; and another shudder crept over me as the idea suggested itself that the snake had ruptured its throat in some way.'

Pondering on the curious phenomenon which the feeding of the snake had brought to light, she recollected that in a goose, which she had seen, as a child, in process of being prepared by the cook, a similar structure was noticed. The remembrance of this fact assisted our authoress in her search after the cause of the phenomenon in question. The keeper informed her that he had often observed the structure which had excited Miss Hopley's attention. In parenthesis, let us express the regret that 'keepers' are not instructed in natural history, elementary anatomy, and physiology. The valuable nature of such an education would soon be felt in the number of interesting observations on the animals under their charge which keepers versed, even in the rudiments of natural science, would be enabled to make. So our authoress, consulting scientific books, soon found that the extension of the snake's windpipe in its upper part, was by no means an occurrence unknown to naturalists. Professor Owen remarks the fact, and all comparative anatomists know, that the tissues of the snake's windpipe, in its upper part, are so loosely connected, that this important breathing-tube can be made to project, and thus freely communicate with the lungs while the creature's mouth and throat are gorged with food. The incident we have quoted goes to show that Miss Hopley's observant powers are of a high order. Indeed, from such a love of observing nature and life, it may be said the best results in natural science often spring.

A perusal of the headings of the chapters in Miss Hopley's book serves to show how varied

are her studies of the serpent-tribes. She has a very curious chapter on the 'tails of snakes,' and shows us therein how different are the characters which the caudal region of serpents may exhibit. The popular reader will undoubtedly turn with great interest to read what Miss Hopley has to say about 'water-snakes' and 'sea-snakes' at large. In the Indian Ocean reside the curious sea-snakes which are highly venomous, and which possess flattened tails serving as a propelling apparatus. But many land-snakes swim with ease and grace. Adders are not unfrequently seen swimming from one island to another on our Scottish lakes. We have seen the common British Ringed Snake (*Tropidonotus natrix*) swim with rapidity after an unfortunate frog which had contrived to obtain a brief start, but which was seized and devoured in a very short space of time. Even the big pythons and anacondas, which crush their prey in their great coils, swim with apparent ease. Very curious must have been the experience of a Captain Pitfield of the steamship *Mexico*, who, as quoted by Miss Hopley from an American newspaper, stated that he had passed through 'a tangled mass of snakes' off the Tortuga Islands, at the entrance to the Gulf of Mexico. These snakes are described as having been 'of all sizes, from the ordinary green water-snake of two feet long, to monsters, genuine "sea-serpents" of fourteen to fifteen feet in length.' We are certainly inclined to agree with Miss Hopley that such a shoal of snakes must have consisted simply of a mass of these reptiles which had been drifted out to sea on brushwood by some river-flood or 'spate.'

The 'great sea-serpent,' whose annual appearances are chronicled with punctuality, receives full and complete justice from Miss Hopley. We are glad to find our authoress is on the side of those naturalists who maintain that there is no *a priori* impossibility in the declaration that giant marine snakes may and do exist. In giant species of marine snakes we may find the explanation of many of the marine appearances which have been authenticated by hosts of credible witnesses. Miss Hopley asks, after supposing this theory to be correct, 'How long would the poison-fang of such a reptile be?' But there seems no need to make the existence or absence of poisonous powers a question. What we desire to know is, 'What is the sea-serpent?' With the plain rule before us of endeavouring to find a natural solution of this query, before rushing into the clouds, it would seem that those zoologists who believe in the huge development of marine snakes, possess a distinct advantage over all other theorists. Giant cuttlefishes, some of which measure thirty or forty feet in length inclusive of their 'arms,' are now known in plenty. A few years ago, such animals were believed to have been evolved from the fertile brain of Victor Hugo, who makes a giant octopus the means of vengeance in his novel *The Toilers of the Sea*. It is not too much to say that with the evidence of new and recent discoveries in cuttlefish-life before us, we should at least be very cautious in denying the possibility and probability of giant sea-snakes being also numbered amongst the fauna of the ocean.

Only about one-fifth of all known species of snakes are possessed of poison-fangs, a topic with which Miss Hopley deals in a highly entertaining

manner; but though comparatively few snakes possess poison-fangs, some of the so-called 'harmless' species, such as the huge pythons and anacondas, become quite as dangerous from their power of crushing their prey by means of their huge and powerful bodies. Miss Hopley satisfactorily disposes of the old idea that these great snakes 'licked' their prey over before swallowing it. The tongue of a snake is never adapted for 'licking,' being, as we have seen, a lithe, rounded organ. The poison-glands of snakes are modified 'salivary glands'—that is to say, they are not new and special structures, but modifications of organs which other animals and reptiles possess. It is a notable fact, that as in a poisonous snake the secretion of these glands is permanently venomous, in a 'mad' dog the saliva becomes temporarily poisonous; and it is well known that the bite of an enraged human being may be most difficult of healing, owing to the apparently virulent character which the saliva acquires. We thus see that one and the same organ and secretion appears to become modified for poisoning properties and functions in very different groups of animals. The rationale of snake-poison in its action on other animals appears to consist in its paralysing effect upon the nervous system and in its effects on the aëration of the blood. It would appear that it acts by preventing the absorption into the blood of the oxygen gas we breathe, and which is a vital necessity for us and for all animals.

Armed with two poison-fangs in the upper jaw, the bite of certain foreign kinds is dangerous, and even fatal; in Great Britain, the viper or adder is happily the only venomous species. The remedies which have been proposed for snake-bite are of course very numerous; but Miss Hopley is probably right in following Dr Stradling when she asserts that, as the poisons of different snakes vary in their effects, it is hopeless to look for any one specific for their varied bites. But it is just possible that underlying the variations in the effects of the venom, there may exist a common type of virulence. For our own part, we should like to hear of Condyl's Fluid (or permanganate of potash) having a wider trial in snake-bite than has yet been accorded it. Injected into the veins, this fluid appears to counteract the effects of the less deadly kinds of venom in a marvellous degree. Possibly it does so, because it throws off oxygen in large quantities, and may thus neutralise the effect of the snake-poison just noted. But the difficulties and dangers of research in such a field are numberless; and there are few persons who, like Dr Stradling, are bold enough to risk being bitten and to experiment in their own persons on the remedies they deem most effectual for snake-bite.

In Miss Hopley's pleasant pages, the general reader will find a mine of information regarding serpents and their literally wondrous history. Studies like these discussed in the volume before us, render good service to the cause of science, in so far as they encourage observation and train the faculties in the work of noting facts and of correlating ideas. Best of all, it is in the study of living nature that the purest enjoyment may be sought and found. What of poetry Wordsworth found in nature, and what of learning Kingsley discovered in his studies,

may be found in some degree at least by every earnest mind that approaches the fields of animal and plant life. A thousand wonders people the leaf; a museum of curiosities finds a home in the water-drop; and the pleasure derived from a search in nature's fields is one that no accident of life can mar, and no misfortune of existence take away.

THE STORY OF JOHNNIE ELLIOT, THE PEDLAR.

In the lonely and rarely visited kirkyard of the parish known as Eskdalemuir, in Dumfriesshire, and among the bleak hills of that district, is a well-nigh forgotten grave, at the head of which stands a plain stone, on which may be read the following inscription:

'In Memory of JOHN ELLIOT, Pedlar, a young man of nineteen years of age, who came from the neighbourhood of Hexham, in Northumberland; and travelling in company with a man of the name of James Gordon, said to have come from Mayo, was barbarously murdered by him at Steel-bush-edge, on the farm of Upper Cassock, on the 14th day of November 1820.

'After the greatest exertions on the part of Sir Thomas Kilpatrick* of Closeburn, Bart., Sheriff-depute of the county, the Honourable Captain William Napier of Thirlestane, and many others, the above-named James Gordon was apprehended at Nairn, and brought to Dumfries; where, after an interesting trial, he was condemned, and executed on the 6th day of June 1821.

'The inhabitants of Eskdalemuir, in order to convey to future ages their abhorrence of a crime which was attended with peculiar aggravations, and their veneration for those laws which pursue with equal solicitude the murderer of a poor friendless stranger as of a peer of the realm, have erected this stone, 1st of September 1821.'

Some years ago, the circumstances attending the murder of the lad Elliot, together with those which led to the capture, trial, and conviction of his murderer, were repeated to us by a gentleman intimately acquainted with the matter; and as these circumstances may not be generally known or remembered, we venture now to narrate the story.

John Elliot, whose remains lie buried in the old kirkyard of the wild and thinly populated parish of Eskdalemuir, was born at Hexham, near Newcastle-on-Tyne. His parents were poor, but respectable, and had previously lost by death one or more of their children. Their boy Johnnie was a sickly lad, weak in body as well as intellect; but good and gentle to his parents, to whom this double weakness seemed to have endeared him the more. As Johnnie advanced in years, his health did not improve; and his parents were advised by a neighbouring medical man to endeavour to obtain for him some out-of-door employment, which, without being too hard, would at the same time afford him plenty of fresh air.

The parents were very reluctant to part with their sickly child; but finding that the boy was

quite unfit for regular manual labour, and being told by the doctor that outdoor exercise would alone give him a chance of life, they finally resolved on purchasing and plenshing for Johnnie a small pack, and starting him as a pedlar or chapman. In those days, this business was much more common than at present; many of those engaged in it had their regular beats in the country districts, where the inhabitants not only depended almost entirely on the pedlars for their groceries, hardware, drapery, &c., but also for their supply of news and literature. John Elliot's parents did not anticipate that their boy would make such a fortune as many others had done in this trade; but they hoped that as an itinerant merchant he might in some measure lessen the expenses attendant on his wandering life.

Equipped with a small red-painted box containing necessities of the humblest description, Johnnie had made several short journeys among the neighbouring hills, when, at the time of my story, he determined to penetrate the wilds of Eskdalemuir, and cross the hills to Moffat Water, intending to return home by Annandale.

On the 11th of November, the lad arrived at Woodhead, in the parish of Canonbie, where he was hospitably received by a farmer named Thomas Lamb. Scarcely had Elliot relieved himself of his pack and commenced to make himself comfortable in the farmer's warm kitchen, when there entered another wayfarer, also an applicant for shelter. This was unhesitatingly granted, in accordance with the custom of the time, a custom which would permit a refusal of hospitality to no one. The new-comer was an Irishman, who, from the description afterwards given of him, could not have been attractive in appearance. He was short in stature, possessed of but one eye, of which the sight was good, deeply pitted by the smallpox, and spoke with a remarkable stammer; peculiarities which do not serve to improve a man's personality, however they may serve to impress it upon others. In spite of these blemishes, the new arrival, who gave the name of Gordon, was made welcome to a share of the evening meal; and afterwards to plenty of clean dry straw in the byre or cowhouse, which latter place he shared as a sleeping-place with Johnnie Elliot. The next day being Sunday, both Elliot and Gordon remained at Woodhead, continuing their journey on the following Monday morning.

It had become evident, from the conversation on the Saturday night, that Elliot and Gordon were up to that time complete strangers to each other; and it was believed that during the halt on the Sunday, the Irishman had by some means ingratiated himself into the kindly heart of the weak pedlar boy; and that Gordon, under promise of showing the lad the most direct road to Eskdalemuir, had accompanied him on his journey on the Monday morning. These two companions, the man with the marked and unpleasant features, and the lad with the conspicuous red box slung across his shoulders, were met by several individuals on the road between Woodhead and Coat, at which latter place they arrived on the evening of Monday the 13th of November. Here they supped and slept, and started again together from Coat on Tuesday morning the 14th, apparently with the intention of finding their way across the hills to Moffat Water.

* Thus on the tombstone; though the Closeburn family name is usually written Kirkpatrick.

It is not known whether Gordon had from the first determined on the murder of his companion; it is perhaps more likely that, believing the red box to contain property of greater value than it in reality did—as a matter of fact the lad's stock-in-trade was not of more than a few shillings' value—Gordon determined to possess himself of it at any cost; and finding that secrecy was a very important factor in the robbery, he may have finally decided upon the murder of the boy. Under pretence that he knew a direct route across the hills by an unfrequented path, very much shorter than that usually followed, and which would take them past the house of a gentleman of the name of Napier, where they were sure of obtaining food and shelter for the night, Gordon persuaded the boy to accompany him to a spot called Steel-bush-edge, on the farm of Upper Cassock. What happened at that place can only be partly conjectured; but there, at all events, on the following Sunday, was found the body of poor Johnnie Elliot foully murdered. It was first discovered by William Glendinning, son of the tenant of the farm of Upper Cassock, who came upon it by the merest accident; for the body lay on a most unfrequented part of the moor, across which there did not even run so much as a footpath. On examination of the remains, it appeared there was a cut or contusion on the chin, a cut above the right eye, and a great many wounds about the back of the head. Both Glendinnings, father and son, recognised the body as that of a pedlar lad who, in company with a man, had visited the farm of Upper Cassock. They also noticed in the mud near where the boy's body was found the prints of heavy clogs strongly bound with iron, shod on the heels with the same metal, and with a peculiarity in the two heel-plate marks, that of the one clog being circular, whilst that of the other was horseshoe shaped. It further appeared that both father and son had noticed this peculiarity in the clogs worn by the man who had visited the farm of Upper Cassock in company with the pedlar boy.

The conclusion arrived at by the doctor and others in the neighbourhood was, that the poor lad had died from the effects of severe blows inflicted on the back of his head with some blunt instrument; and suspicion as to the perpetrator naturally attached itself to the Irishman Gordon, as being the last person seen in the boy's company.

On the day on which the body of John Elliot was interred in Eskdalemuir kirkyard, William Glendinning happened again, in company with a shepherd, to be in the vicinity of the scene of the murder, when they came upon a pair of clogs. These they did not remove, but at once returned to the farm and reported the matter to the elder Glendinning. Dr Graham was sent for; and he, in company with the elder Glendinning, proceeded to the spot, and brought away the clogs, which the latter recognised as those worn by the pedlar when he had visited the farm of Upper Cassock.

Information having been given to the sheriff, the body of Elliot was disinterred, and again examined by two surgeons. These gentlemen were both of opinion that the wounds on Elliot's head had been inflicted by an instrument not

very sharp, such as the iron hoop of a clog; and having applied the forepart of one of the clogs found to a semicircular wound on the back part of the head of the deceased, they found it to fit exactly. The clogs in question being those believed to be worn by the deceased pedlar, it was inferred that he may have sat down to remove, for some purpose or other, the clogs from his feet, when the murderer seized upon one of them as a weapon of assault. At least, there remained little doubt that whoever had committed the murder, had held one of the ponderous clogs by the heel, and had beaten the poor boy on the head until life was extinct; that the murderer had then dropped the clogs on the spot where they were found, and after rifling the lad's box, and keeping it in his possession for a day or two, had flung it into a small stream on the road to Ettrick, where it was found a short time afterwards.

All the circumstances attending the boy's death seemed to point to the Irishman Gordon as the murderer, and an advertisement was published in a local paper describing Gordon's appearance and offering a reward for his apprehension.

Time wore on; no clue had been discovered which might lead to the murderer of Johnnie Elliot, nor had anything been heard of the Irishman Gordon, who, it was supposed, had left the country. The horrible death of the poor pedlar boy on Eskdalemuir was becoming an event of the past, which would in time be soon forgotten, when the remarkable capture of the criminal in the manner we are about to relate took place. An agent travelling for some firm in the south, happened to be in the town of Nairn on a pouring wet day. He had transacted his business, and was apparently at a loss how to get through the remainder of the dreary afternoon. The travellers' room in the inn at which the agent was staying, was up-stairs, and looked out on to the market-place. Ringing the bell, the agent in despair asked whether he could be supplied with any sort of book or newspaper; and after some delay, an old copy of the *Dumfries Courier*, which by chance had been left behind by some former traveller, was produced, and handed to the agent, who seated himself near the window and began to study the old, but to him in lack of a fresher, still interesting paper. Coming at last to the fourth page, the advertisement sheet, he read as follows:

DUMFRIES, December 12, 1820.

Whereas the dead body of a young man apparently about sixteen years of age, who had travelled the country as a chapman, was on Sunday afternoon, 26th day of November current, found about two miles to the north of Upper Cassock, and about one mile from Ettrick Pen, both in the parish of Eskdalemuir, in the county of Dumfries; and from the number of wounds upon his head, there is every reason to believe he had been murdered about eight days ago. The deceased wore a dark green corduroy jacket and waistcoat, dark jean trousers, and a bonnet. The person who was last seen in company with the deceased, and who has not been heard of, spoke the Irish accent, was of low stature, middle age, dark complexion, much pitted with the smallpox,

wanting the sight of one of his eyes, and had a remarkable stammer in his speech.

Any person apprehending or giving information to FRANCIS SHORTT, Procurator Fiscal of the Justice of Peace Court, as may lead to the discovery of the person before described, will be suitably rewarded.

The traveller, after carefully reading this advertisement, laid down the paper, and began soliloquising: 'How could any man possessed of so many peculiarities ever expect to be able to commit murder without being discovered? From that description of his person, I feel sure that I would recognise him at once were I to meet him.' Then turning his head, he looked out into the street and across the marketplace. Suddenly his eyes became fixed upon a man carelessly leaning against the opposite wall. 'Why, there stands the very man!' he cried, as springing up and seizing his hat, he without hesitation rushed down-stairs, dashed across the street, and touching the man upon the shoulder, at once charged him with being the murderer of the pedlar boy on Eskdalemuir. The man was taken by surprise on being taxed so suddenly and unexpectedly, and without considering, replied: 'No—no—nobody saw me do it!'

A constable was at once procured; and the man's appearance having been verified by the description given in the advertisement, and confirmed by his own admission, he was taken into custody, and brought to Dumfries, where, after a lengthened trial, he was, by a chain of circumstantial evidence, convicted and hanged for the murder of the pedlar boy.

The peculiar circular shape of one of the heel-plates of the Irishman's clogs proved that he had been on the spot at the time of the murder; and altogether his whole general appearance was so marked, that we cannot but agree with the traveller, and wonder how a man possessed of so many peculiar features could ever have indulged in the hope of escaping recognition. Nevertheless, had it not been for the prompt and determined action of the traveller at Nairn, the murderer might have passed undetected, if not unrecognised, out of Nairn, and eventually escaped from the country.

Gordon, who was executed at Dumfries on the 6th of June 1821, does not seem ever to have confessed the crime brought against him, although, before his execution, he acknowledged tacitly the justice of his sentence.

The following is an extract from the *Dumfries Courier* published within a day or two after the execution. After describing the manner in which Gordon appeared on the scaffold, the paper goes on to say: 'What added unspeakable interest to this awful crisis, and gave it indeed the character of wild and appalling sublimity, was the remarkable circumstance, that the moment in which the prisoner took his place upon the drop was indicated by a vivid flash of lightning and a tremendous burst of thunder. A second peal of thunder seemed to announce his departure, and produced an impression not easily forgotten by the spectators, particularly as these were the only two peals heard during the day.'

One more extract from the same source and our

story will be ended: 'The deceased [speaking of the man executed] was the son of Michael Gordon of Ballyna, County Mayo, and had a peculiar cranium. Among other anomalies, his head presented one which will furnish curious matter of speculation for the phrenologist, one side of the head exhibiting the organ of destructiveness in distinguished prominence, whilst the corresponding region on the opposite side was flat and utterly unmeaning.'

THE LAST OF THE WESTMINSTER LAW-COURTS.

THE courts of justice at Westminster, the materials of which were sold by public auction, prior to their demolition, at the commencement of the present year, have been generally styled the 'old courts' almost since the project of building a central palace of justice was first mooted, now many years ago. But they deserved the title only in contradistinction to that newer and magnificent pile of buildings just completed in the Strand, from the designs of the late Mr Street, R.A., and generally spoken of as the 'New Law Courts,' though officially known as the Royal Courts of Justice. In fact, it is less than sixty years since the 'old' law-courts were built. Up to the accession of George IV., the judges used to sit in the great Hall of Westminster for the purpose of dispensing justice to the king's subjects; and it was only about the year 1825 that the accommodation then provided was found to be inadequate to deal with the rapidly growing mass of litigation which at that period resulted from our increasing prosperity and activity in trade.

The circumstances which led to the building of the old courts were shortly these. The original superior court of justice in England, the *curia regis*, appears to have been held in a room called—from the nature of its ornamentation—the Exchequer Chamber. It was in later times called the Star Chamber; but the name of our Court of Exchequer, which has only recently been superseded by the single designation given to all the Common Law Courts alike, namely, Courts of Queen's Bench, probably took its title from this chamber when King Edward III. is supposed to have presided over his Council for the levy of fines and amercements for his exchequer. In the reign of William Rufus was built the 'Hall of Westminster,' and we know that no long time afterwards this Hall became the accustomed seat of justice. Originally, the *curia regis* used to attend the king on his travels throughout the country; but it was soon found that the trial of causes suffered thereby much delay and inconvenience. To remedy this, it was enacted by Magna Charta that the Common Pleas should sit *certo loco*; and accordingly that court sat thenceforward in Westminster Hall. About the time of Henry III., the King's Bench and Exchequer Courts were also located in the same place; but it was not until Henry VIII. ascended the throne that the Chancellors followed suit. From that time until towards the middle of the present century, both Common Law and Chancery Courts sat regularly in the grand old Hall of Rufus; which they continued to do until after the accession of George IV.,

when the magnificent carved screen which separated the Chancery Court from the rest was removed.

The appearance presented by Westminster Hall, with the judges, arrayed in all the majesty of the law, sitting at its further end, along which was placed a marble bench, upon which the king in person occasionally took his seat, is well depicted in the well-known drawing by Gravelot, as well as in many another well-authenticated print. The scene was unique, and to our sense incongruous. All the courts were held at the upper end of the Hall, facing the great door, the Chancery Court, as we have stated, being partitioned off from the rest by a screen. Each court was covered by a canopy, and was curtained in at the sides. The rest of the Hall was a busy mart for the sale of books, fruit, flowers, and millinery, in which the vendors showed rivalry as keen as that of the opposing litigants higher up the Hall. By the increasing pressure of business, the courts were at last driven to seek better accommodation; and about sixty years ago, the buildings which have just been demolished were designed by Sir John Soane, and the judges shortly afterwards removed from the Hall with all the pomp and circumstance of law. As a market-place too, Westminster Hall has since that time gradually lost its glory; and at the commencement of the present year, the only signs remaining of its quondam use as such were two old-fashioned fruit-stalls presided over by two equally old-fashioned Hebes, whose occupation was to supply buns and ginger-beer.

And so the 'old courts' were built, and after centuries of legal and constitutional struggles in Westminster Hall, its history as a court of law was for ever closed. Sir John Soane's courts were at best little more than a makeshift. They were stuffy, badly arranged, hideously designed, and utterly inadequate for their purpose. They were the result of necessity, and were designed without any provision for the future. Very soon, new courts had to be built in Lincoln's Inn for the Chancery judges (who have since sat apart from their Common Law brethren) until they have again been brought together by the building of the new temple of justice opened a few weeks ago. Even after this migration, the courts at Westminster proved inadequate for the Common Law business, and within ten years from their building, an agitation arose, which waxed ever greater, until it culminated in the scheme for the bringing together of all the courts under one roof, which has since been carried out. The old courts have thus proved to be but a link between the glorious past legal history of Westminster Hall and the future of the Royal Courts of Justice. 'Rufus' Hall' has been for ever rendered famous by the judgments of such men as Brougham, Eldon, Mansfield, Coke, and Hale; as well as for such historical trials as those of Sir Thomas More, Wilkes, and Warren Hastings. The 'old courts' have also been later the scene of historical events, amongst which may be mentioned the remarkable Tichborne trial, which is still fresh in the memory, and of Arthur Orton's subsequent indictment for and conviction of perjury; and their short history only closed on last Christmas Eve with a trial of a nature unprecedented in more ways than one, a trial which converted the Court of

Exchequer into a sculpture-gallery, which lasted—including the vacation—from June till after the close of the Michaelmas sittings, and which resulted in the award of enormous damages in an action for libel.

With the demolition of the 'old courts' expire several of the old quaint customs, which, though of reasonable origin, have for long outlived their *raison d'être*. Amongst these are the offices of 'Tubman' and 'Postman,' held by two barristers, originally appointed by the Lord Chief Baron to their places in the Court of Exchequer, as presidents of the standard measures of capacity and length. For long, these offices have merely entitled their holders to pre-audience in the court, and now they have for ever disappeared. The old custom of 'fagot-chopping' was also in force in the old court. It was a symbolical performance in the same court by the senior alderman on the occasion of the presentation of the sheriffs of London and Middlesex. Gradually tending the way of other old customs, the clipping of a twig 'did service for the tenants' twenty years ago, and the custom has now altogether vanished. It remains to be seen whether another time-honoured custom—that of the Lord Mayor's visit to the courts with his retinue on each successive 9th of November—will perish with the migration of the judges to the Strand; though it may be anticipated that if the custom does survive, some alteration in the route of the 'show' will probably have to be made.

Thus, after a short history of less than sixty years' duration, have the 'old courts' utterly disappeared. They have served their purpose; and few people will regret the demolition of the unseemly buildings which, hideous in themselves, did much to obscure the beauty of the grand old Hall of Rufus. There is now a central place for the trial of all actions and matters brought before the High Court of Justice; and ere long, the old scene of legal strife at Westminster will have given place to the bloom of a London flower-garden!

A MODERN MADRIGAL.

Come, for the buds are burst in the warren,
And the lamb's first bleat is heard in the mead;
Come, be Phyllis, and I'll be Coryn,
Though flocks we have none to fold or feed.

Come for a ramble down through the dingle,
For Spring has taken the Earth to bride;
Leave the cricket to chirp by the ingle,
And forth with me to the rivulet-side.

Lo! how the land has put from off her
Her virgin raiment of Winter white,
And laughs in the eyes of the Spring, her lover,
Who flings her a garland of flowers and light.

Hark, how the lark in his first ascension
Fills heaven with love-songs, hovering on high;
Trust to us for the Spring's intention,
Trust to the morn for a stormless sky.

I know the meadow for daffodownillies,
And the haunt of the crocus purple and gold;
I'll be Coryn, and you'll be Phyllis:
Springs to-day are as sweet as of old.

F. WYVILLE HOME.

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